

New results from RENO and Future RENO-50 Project

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RENO (Reactor Experiment for Neutrino Oscillation) is designed to measure the neutrino mixing angle θ_{13} and the effective mass squared difference $|\Delta m^2_{ee}|$ using electron anti-neutrinos from six reactors at Hanbit nuclear power plant in S. Korea. RENO has been taking data since August 2011 using two identical detectors at near and far sites. The unprecedented measurement of the θ_{13} by RENO was made in 2012 with 4.9 sigma significance using 220 live days of data.

In this talk we present the updated $\sin^2(2\theta_{13})$ value and first measurement on $|\Delta m^2_{ee}|$ based on a spectral shape analysis using 500 live days of data.

The 5 MeV excess of the electron anti-neutrino events seen in RENO data will be covered and the R&D status of the future RENO-50 project will be presented too.